SANTA CRUZ BIOTECHNOLOGY, INC.

RPA40 (H-6): sc-374443

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

RNA polymerases transcribe nuclear genes for ribosomal RNA, thus representing ribosomal biogenesis. RNA polymerase I (Pol I) is located in the nucleolus and transcribes class I genes, which code for large ribosomal RNA. Different subunits of the Pol I transcription machinery are targets of various physiological stimuli, which suggests that multiple signaling pathways are involved in carrying out Pol I transcription. RPA16, RPA40 and RPA135 are subunits of Pol I that associate with each other at an early stage of RNA Pol I assembly. RPA40 is essential for the function and integrity of the complex and is also an essential subunit of RNA polymerase III (Pol III).

CHROMOSOMAL LOCATION

Genetic locus: POLR1C (human) mapping to 6p21.1; Polr1c (mouse) mapping to 17 C.

SOURCE

RPA40 (H-6) is a mouse monoclonal antibody raised against amino acids 1-105 of RPA40 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RPA40 (H-6) is available conjugated to agarose (sc-374443 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374443 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374443 PE), fluorescein (sc-374443 FITC), Alexa Fluor® 488 (sc-374443 AF488), Alexa Fluor® 546 (sc-374443 AF546), Alexa Fluor® 594 (sc-374443 AF594) or Alexa Fluor® 647 (sc-374443 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374443 AF680) or Alexa Fluor® 790 (sc-374443 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

APPLICATIONS

RPA40 (H-6) is recommended for detection of RPA40 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for RPA40 siRNA (h): sc-38242, RPA40 siRNA (m): sc-38243, RPA40 shRNA Plasmid (h): sc-38242-SH, RPA40 shRNA Plasmid (m): sc-38243-SH, RPA40 shRNA (h) Lentiviral Particles: sc-38242-V and RPA40 shRNA (m) Lentiviral Particles: sc-38243-V.

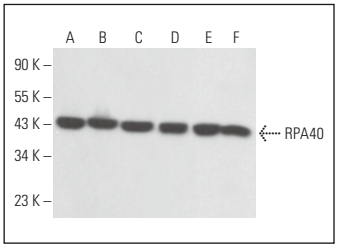
Molecular Weight of RPA40: 40 kDa.

Positive Controls: RT-4 whole cell lysate: sc-364257, MCF7 whole cell lysate: sc-2206 or Neuro-2A whole cell lysate: sc-364185.

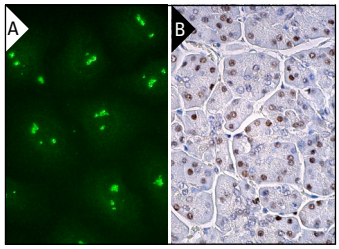
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



RPA40 (H-6): sc-374443. Western blot analysis of RPA40 expression in MCF7 (**A**), RT-4 (**B**), Jurkat (**C**), RAW 264.7 (**D**) and Neuro-2A (**E**) whole cell lysates and rat testis tissue extract (**F**).



RPA40 (H-6): sc-374443. Immunofluorescence staining of methanol-fixed HeLa cells showing nucleolar localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human pancreas tissue showing nuclear staining of subset of glandular cells (**B**).

SELECT PRODUCT CITATIONS

1. Ramsay, E.P., et al. 2020. Structure of human RNA polymerase III. Nat. Commun. 11: 6409.
2. Frottin, F., et al. 2021. Multiple pathways of toxicity induced by C9orf72 dipeptide repeat aggregates and G4C2 RNA in a cellular model. Elife 10: e62718.
3. Jiang, Y., et al. 2022. Cross-regulome profiling of RNA polymerases highlights the regulatory role of polymerase III on mRNA transcription by maintaining local chromatin architecture. Genome Biol. 23: 246.
4. Pérez-Berlanga, M., et al. 2023. Loss of TDP-43 oligomerization or RNA binding elicits distinct aggregation patterns. EMBO J. 42: e111719.
5. Zhang, Y., et al. 2023. RNA polymerase I subunit RPA43 activates rRNA expression and cell proliferation but inhibits cell migration. Biochim. Biophys. Acta Gen. Subj. 1867: 130411.
6. Cheng, S., et al. 2025. USP39 phase separates into the nucleolus and drives lung adenocarcinoma progression by promoting GLI1 expression. Cell Commun. Signal. 23: 56.

RESEARCH USE

For research use only, not for use in diagnostic procedures.